

## AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method, comprising:  
operating a first processor connected with a first bus and a second bus wherein the  
first processor controls the first bus;  
operating a second processor connected with the first bus and the second bus  
wherein the second processor controls the second bus;  
detecting faults via hardware associated with the said first processor and the said  
second processor, wherein the hardware includes a Redundant Host  
Controller; and  
responsive to an occurrence of a fault in the said first processor, transferring  
control of the said first bus to the said second processor via hardware  
associated with the said first processor and the said second processor,  
wherein the hardware includes a Redundant Host Controller.
2. (Currently Amended) The method of claim 1, wherein the said operating the a  
first processor comprises:  
initializing the first processor;  
determining whether the first processor is designated to operate in the active mode  
or the backup mode;  
responsive to the first processor being designated to operate in the active mode,  
performing an active mode boot process;  
responsive to the first processor being designated to operate in the backup mode,  
performing a backup mode boot process; and  
performing system host functions.

3. (Currently Amended) The method of claim 2, wherein the said determining whether the first processor is designated to operate in the active mode or the backup mode is based on preconfigured information in the processor's BIOS.
4. (Currently Amended) The method of claim 2, wherein the said active mode boot process comprises:
- building a coherent universal map of devices connected with the first bus and the second bus;
  - determining whether the active mode is a split mode nor ~~or~~ a cluster mode;
  - if the active mode is a split mode, starting drivers on the said second bus if all drivers are compatible, and transitioning into a cluster mode if not all drivers are compatible;
  - if the active mode is a cluster mode, starting all compatible drivers on the said second bus; and
  - if the active mode is neither split mode or cluster mode, assuming a single host operation mode and starting all compatible drivers on the first bus and the second bus.
5. (Currently Amended) The method of claim 4, wherein the said determining whether the active mode is a split mode or a cluster mode is based on preconfigured information in the first processor's BIOS.

6. (Currently Amended) The method of claim 2, wherein the ~~said~~ backup mode boot process comprises:
- requesting a universal map of devices connected with the ~~said~~ first bus and the ~~said~~ second bus;
- determining whether a split mode response has been received from the second processor;
- if a split mode response has not been received,
- receiving a coherent map of devices connected the ~~said~~ second bus from the ~~said~~ second processor,
- entering a warm standby mode, and
- loading all compatible drivers for devices connected with the ~~said~~ first bus and placing them into a pending state; and
- if a split mode response has been received,
- determining whether a split mode request from the second processor to the first processor has been successful,
- if the split mode request has been successful, determining whether all drivers for devices on the first bus are compatible,
- starting all registered device drivers on the ~~said~~ second bus if all drivers are compatible, and
- transitioning into a cluster mode and loading and starting all drivers for the ~~said~~ second bus is not all loaded drivers are compatible, and
- if the split mode request has not been successful,
- transitioning into a cluster mode, and
- loading and starting all drivers for devices connected with the ~~said~~ first bus.

7. (Currently Amended) The method of claim 1, wherein the said transferring control of the said first bus to the said second processor comprises:  
suspending control of and disconnecting the said first processor from the said first bus;  
sending a switch-over message to the said second processor; and  
activating device drivers on the second processor to take control of bus devices.
8. (Cancelled)
9. (Cancelled)
10. (Currently Amended) A system comprising:  
a first storage device coupled with a first processor connected with a first bus  
operating in an active mode so that the first processor controls the first bus;  
a second storage device coupled with a second processor connected with a second bus operating in an active mode so that the second processor controls the second bus; and  
hardware associated with the said first processor and the said second processor to detect faults in the processors transfer control of the said first bus to the said second processor via hardware associated with the said first processor and the said second processor responsive to detection of a fault.

11. (Currently Amended) The system of claim 10, wherein the ~~said~~ first processor:  
determines whether the first processor is designated to operate in the active mode  
or the backup mode;  
responsive to the first processor being designated to operate in the active mode,  
performs an active mode boot process;  
responsive to the first processor being designated to operate in the backup mode,  
performs a backup mode boot process; and  
performs system host functions.
12. (Currently Amended) The system of claim 11, wherein the ~~said~~ determining  
whether the first processor is designated to operate in the active mode or the  
backup mode is based on preconfigured information in the processor's BIOS.
13. (Currently Amended) The system of claim 11, wherein the ~~said~~ active mode boot  
process comprises:  
building a coherent universal map of devices connected with the first bus  
and the second bus;  
determining whether the active mode is a split mode or a cluster mode;  
if the active mode is a split mode, starting drivers on the ~~said~~ second bus if  
all drivers are compatible, and transitioning into a cluster mode if not all drivers  
are compatible;  
if the active mode is a cluster mode, starting all compatible drivers on the  
~~said~~ second bus; and

if the active mode is neither split mode or cluster mode, assuming a single host operation mode and starting all compatible drivers on the first bus and the second bus.

14. (Currently Amended) The system of claim 13, wherein the said determining whether the active mode is a split mode or a cluster mode is based on preconfigured information in the processor's BIOS.
15. (Currently Amended) The system of claim 11, wherein the said backup mode boot process comprises:
  - requesting a universal map of devices connected with the said first bus and the said second bus;
  - determining whether a split mode response has been received from the second processor;
  - if a split mode response has not been received,
  - receiving a coherent map of devices connected the said second bus from the said second processor,
  - entering a warm standby mode, and
  - loading all compatible drivers for devices connected with the said first bus and placing them into a pending state; and
  - if a split mode response has been received,
  - determining whether a split mode request from the second processor to the first processor has been successful,
  - if the split mode request has been successful, determining whether all drivers for devices on the first bus are compatible,

starting all registered device drivers on the said second bus if all drivers are compatible, and  
transitioning into a cluster mode and loading and starting all drivers for the said second bus is not all loaded drivers are compatible, and  
if the split mode request has not been successful,  
transitioning into a cluster mode, and  
loading and starting all drivers for devices connected with the said first bus.

16. (Currently Amended) The system of claim 10, wherein the said transferring control of the said first bus to the said second processor comprises:  
suspending control of and disconnecting the said first processor from the said first bus;  
sending a switch-over message to the said second processor; and  
activating device drivers on the second processor to take control of bus devices.
17. (Cancelled)
18. (Cancelled)
19. (Currently Amended) A machine-readable medium having stored thereon data representing a set of instructions which, when executed by a machine ~~a processor~~, cause the machine ~~processor~~ to:  
operate a first processor connected with a first bus and a second bus wherein the first processor controls the first bus;

operate a second processor connected with the first bus and the second bus  
wherein the second processor controls the second bus;  
detect faults via hardware associated with the said first processor and the said  
second processor, wherein the hardware includes a Redundant Host  
Controller; and  
responsive to an occurrence of a fault in the said first processor, transferring  
control of the said first bus to the said second processor via hardware  
associated with the said first processor and the said second processor,  
wherein the hardware includes a Redundant Host Controller.

20. (Currently Amended) The machine-readable medium of claim 19, wherein the  
said operating a first processor comprises:  
initializing the first processor;  
determining whether the first processor is designated to operate in the active mode  
or the backup mode;  
responsive to the first processor being designated to operate in the active mode,  
performing an active mode boot process;  
responsive to the first processor being designated to operate in the backup mode,  
performing a backup mode boot process; and  
performing system host functions.
21. (Currently Amended) The machine-readable medium of claim 20, wherein the  
said determining whether the first processor is designated to operate in the active



mode or the backup mode is based on preconfigured information in the processor's BIOS.

22. (Currently Amended) The machine-readable medium of claim 20, wherein the ~~said~~ active mode boot process comprises:
- building a coherent universal map of devices connected with the first bus and the second bus;
- determining whether the active mode is a split mode or a cluster mode;
- if the active mode is a split mode, starting drivers on the ~~said~~ second bus if all drivers are compatible, and transitioning into a cluster mode if not all drivers are compatible;
- if the active mode is a cluster mode, starting all compatible drivers on the ~~said~~ second bus; and
- if the active mode is neither split mode or cluster mode, assuming a single host operation mode and starting all compatible drivers on the first bus and the second bus.
23. (Currently Amended) The machine-readable medium of claim 22, wherein the ~~said~~ determining whether the active mode is a split mode or a cluster mode is based on preconfigured information in the processor's BIOS.
24. (Currently Amended) The machine-readable medium of claim 20, wherein the ~~said~~ backup mode boot process comprises:

requesting a universal map of devices connected with the said first bus and the  
said second bus;  
determining whether a split mode response has been received from the second  
processor;  
if a split mode response has not been received,  
receiving a coherent map of devices connected the said second bus from the said  
second processor,  
entering a warm standby mode, and  
loading all compatible drivers for devices connected with the said first bus and  
placing them into a pending state; and  
if a split mode response has been received,  
determining whether a split mode request from the second processor to the first  
processor has been successful,  
if the split mode request has been successful, determining whether all drivers for  
devices on the first bus are compatible,  
starting all registered device drivers on the said second bus if all drivers are  
compatible, and  
transitioning into a cluster mode and loading and starting all drivers for the said  
second bus is not all loaded drivers are compatible, and  
if the split mode request has not been successful,  
transitioning into a cluster mode, and  
loading and starting all drivers for devices connected with the said first bus.

25. (Currently Amended) The machine-readable medium of claim 19, wherein the ~~said~~ transferring control of the ~~said~~ first bus to the ~~said~~ second processor comprises:
- suspending control of and disconnecting the ~~said~~ first processor from the ~~said~~ first bus;
- sending a switch-over message to the ~~said~~ second processor; and
- activating device drivers on the second processor to take control of bus devices.
26. (Cancelled)
27. (Cancelled)
28. (New) An apparatus comprising:
- a first processor connected with a first bus operating in an active mode so that the first processor controls the first bus;
- a second processor connected with a second bus operating in an active mode so that the second processor controls the second bus; and
- hardware associated with the first processor and the second processor to detect faults in the processors transfer control of the first bus to the second processor via hardware associated with the first processor and the second processor responsive to detection of a fault, wherein the hardware includes a Redundant Host Controller.

29. (New) The apparatus of claim 28, wherein the first processor:  
determines whether the first processor is designated to operate in the active mode  
or the backup mode;  
responsive to the first processor being designated to operate in the active mode,  
performs an active mode boot process;  
responsive to the first processor being designated to operate in the backup mode,  
performs a backup mode boot process; and  
performs system host functions.
30. (New) The apparatus of claim 29, wherein the determining whether the first  
processor is designated to operate in the active mode or the backup mode is based  
on preconfigured information in the processor's BIOS.